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Orthopteran Infections by *Mermis subnigrescens* Cobb (Nematoda) in Iowa

MELVIN DENNER¹

Abstract. *Mermis subnigrescens* apparently infects only members of the families Acrididae and Tettigoniidae in Iowa; attempts to infect members of the family Gryllidae were unsuccessful. At least fifteen species of grasshoppers may harbor this parasite in Iowa.

Christie (1937) recorded a number of species of grasshoppers which were naturally and/or experimentally infected with *Mermis subnigrescens*. Experimental infections occurred in *Arphia sulphurea* (F.) and in *Romalea microptera* (Beauvois). Naturally infected hosts included *Chortophaga virifasciata* (DeG.), *Conocephalus brevipennis* (Scudder), *Encoptolophus sordidus* (Burm.), *Melanoplus bivittatus* (Say), *M. mexicanus* (Saussure), and *Orphulella pelidna* (Burm.). Natural and experimental were found in *Camnula pelucida* (Scudder), *Chorthippus longicornis* (Latreille) and *Melanoplus femurrubrum* (DeG.).

In experimental infections, hosts were examined 28 days after exposure to *Mermis subnigrescens* eggs. All feeding experiments involved coating lettuce leaves with varying numbers of viable eggs and allowing the grasshoppers to feed naturally. Naturally infected grasshoppers were collected from three areas in Iowa, including Iowa Lakeside Laboratory in northwest Iowa, New Hampton in northeast Iowa and Ames in central Iowa. Grasshoppers from field collections were dissected with microdissection equipment and examined for parasites. Attempts to infect *Acheta assimilis* (F.) and *Nemobius* sp. (Serv.) were unsuccessful. Below is a host-list for experimental and natural infections of *M. subnigrescens* in Iowa.

Species	Type infection	
	N=Natural	E=Experimental
<i>Chorthippus longicornis</i> (Latreille)	N	
<i>Chortophaga viridifasciata</i> (DeGeer)	N,	E
<i>Conocephalus strictus</i> (Scudder)	N	
<i>Conocephalus fasciatus</i> (DeGeer)	N	
<i>Dissosteira carolina</i> (Linnaeus)	N	
<i>Encoptolophus sordidus sordidus</i> (Burmeister)	N,	E
<i>Melanoplus bivittatus</i> (Say)	N,	E
<i>M. differentialis</i> (Thomas)	N,	E
<i>M. femurrubrum</i> (DeGeer)	N,	E
<i>M. mexicanus mexicanus</i> (Saussure)	N,	E
<i>Neoconocephalus ensiger</i> (Harris)	N	
<i>Orchelimum</i> sp.	N	
<i>Phoetaliectes nebrascensis</i> (Thomas)	N	
<i>Schistocerca americana</i> (Drury)	N	
<i>Scudderia furcata furcata</i> (Brunner)	N	

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LITERATURE CITED

CHRISTIE, J. R. 1937. *Mermis subnigrescens*, a nematode of grasshoppers. J. Agr. Res. 55:353-363.